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Crafting Assessment Questions: Creating the Tools to Assess Information Literacy Objectives for Art and Design: A Workshop

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Assessment Craft

Rebecca Feind

Kathy Clarke

Basic Information Literacy @JMU

Madison Research Essentials Tutorial

Madison Research Essential Skills Test (MREST)

- All new students (~4300) complete before the end of the first year
- Proctored test, secure lab
- Competency-based
- Objective-driven
- Graduation requirement, holds apply for non-completion

Full Disclosure



[About CARS](#) | [Assessment at JMU](#) | [Awards](#) | [CARS Faculty, Staff, & Students](#) | [Graduate Programs](#) | [Instruments](#) | [Research](#) | [Resources](#) -

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Assessment Support
Service](#)

>> [Assessment Progress
Template](#)

>> [Assessment Awards](#)

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Council](#)

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>> [Alumni Survey](#)

>> [Student Feedback](#)

>> [JMU Assessment and the
IRB](#)

MISSION

The mission of the Center for Assessment and Research Studies (CARS) at James Madison University is to provide quality assessment service to the university, to provide applied graduate training in both assessment and measurement, to increase the use of innovative technology in assessment practice, to increase the rigor of measurement and statistical techniques used in assessment practice, and to produce quality scholarship in assessment and measurement.

VISION

To be nationally recognized as a standard of excellence for practice, programs, and scholarship in assessment and measurement.

VALUES

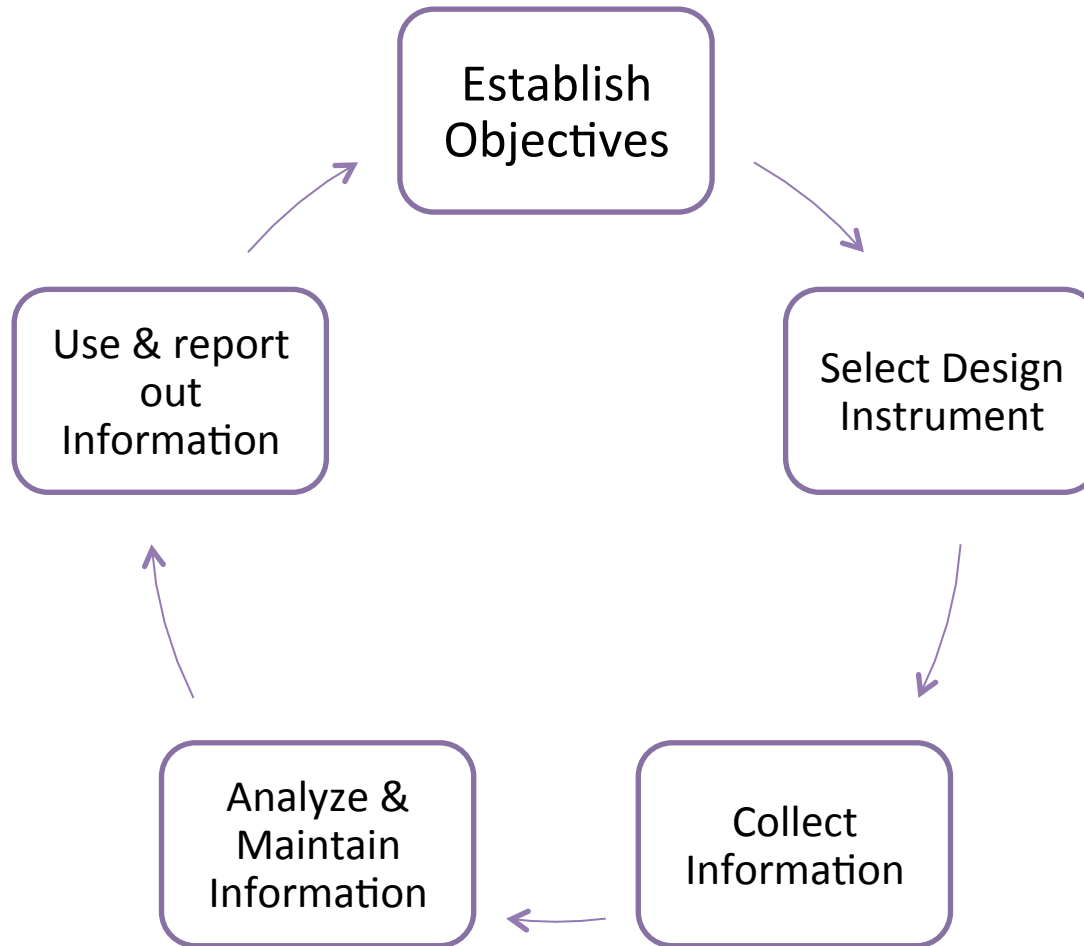
Quality: We value quality in all of our endeavors.

Innovation: We value the use of innovative technology and the use of more rigorous measurement and statistical techniques in assessment and measurement.

Appropriateness: We value a match between the technology or measurement/statistical technique being used and the assessment-related questions being asked.

Research: We value rigorous study of the instruments, technologies and

Assessment Paradigm



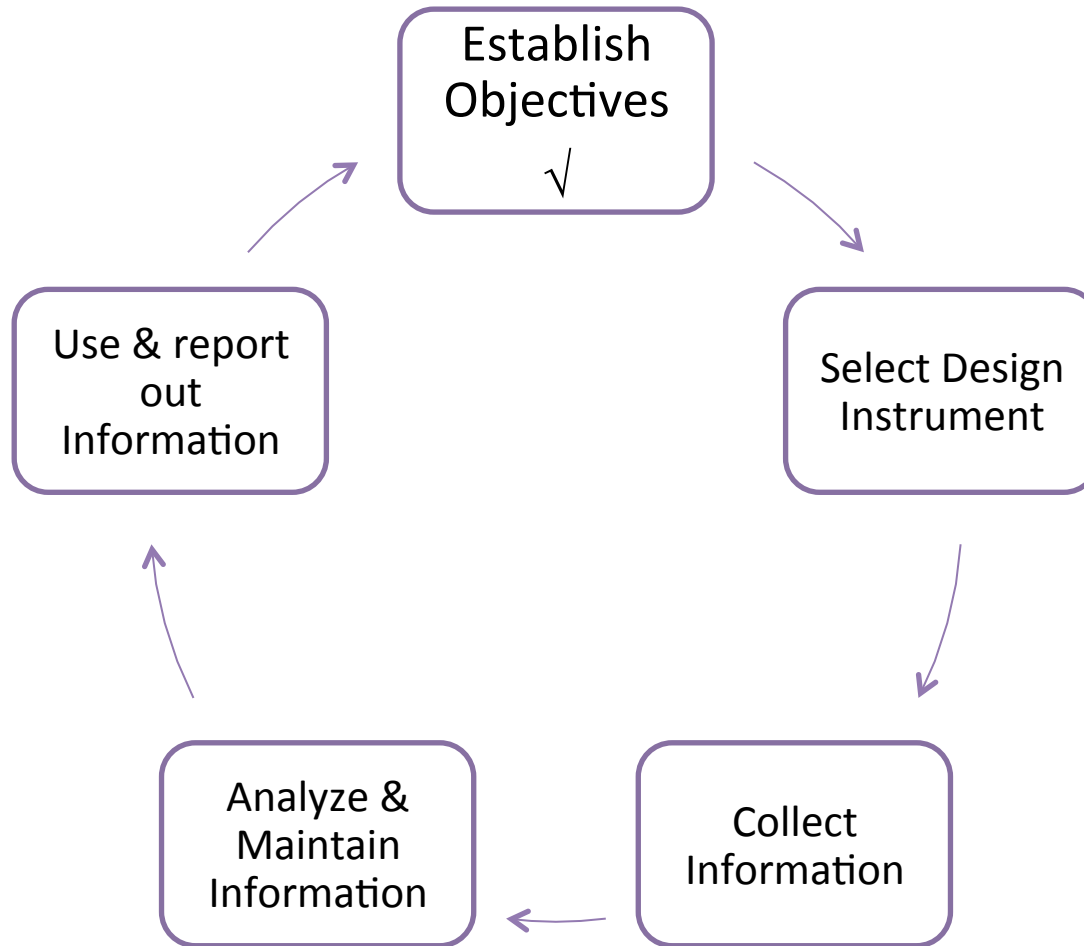
After completing *Cluster One: Skills for the 21st Century*,
students should be able to:

1. Recognize that information is available in a variety of forms including, but not limited to, text, images, and visual media.
2. Determine when information is needed and find it efficiently using a variety of reference sources.
3. Evaluate the quality of the information.
4. Use information effectively for a purpose.
5. Employ appropriate technologies to create an information-based product.
6. Use information ethically and legally.

Use Existing Objectives

- Evaluate claims in terms of clarity, credibility, reliability, and accuracy (C1-Critical Thinking)
- Effectively incorporate and document appropriate sources to support an argumentative thesis or point of view (C1-Writing)
- Demonstrate an understanding of broader cultural, historical, or conceptual contexts of particular issues, ideas, objects, or events - past and present. (C2 – Human Questions)
- Identify key primary sources relating to American history, political institutions and society (C4-American Experience)
- ...Be able to distinguish science from pseudoscience. (C3-Natural World)
- Identify key primary sources relating to American history, political institutions and society (C4-American Experience)
- Discern the extent to which sources of information about the socio-cultural dimension are reputable and unbiased (C5-Individuals in the Human Community)
- Evaluate the extent to which the approach to, and uses of, psychosocial research are ethical and appropriate (C5-Individuals in the Human Community)

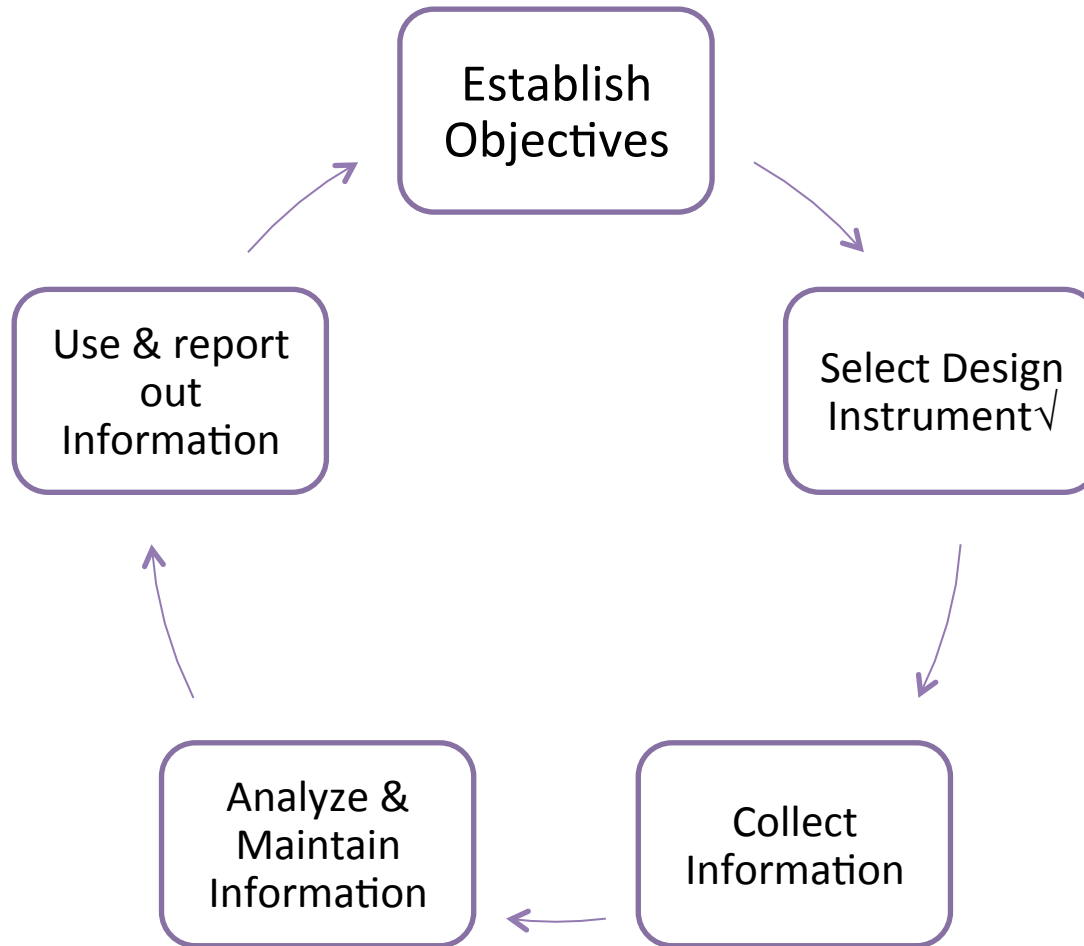
Assessment Paradigm



Test Blueprint

C1 Information Literacy Objective	Items	# of Items	% of Test
1: Recognize that information is available in a variety of forms including but not limited to text, images and visual media	1048, 172, 173, 209, 1005, 1042, 1056	7	18%
2: Determine when information is needed and find it effectively using a variety of reference sources	1, 6, 8, 109, 110, 111, 205, 1003, 211, 120, 156, 159, 160, 162, 1009, 1016, 1017	17	46%
3: Evaluate the quality of information	40, 43, 131, 221, 1037	5	14%
4: Use information effectively for a purpose	229, 1050, 1053, 53	4	11%
5: Employ appropriate technologies to create an information-based product			
6: Use information ethically and legally	129, 157, 228, 1001	4	11%

Assessment Paradigm



Psycho-Metrics *aka why to be nice to assessment professionals...*

Items that Did NOT Function Well

(8) ITEM # 229 Objective: 1 AnswerKey: A

A reference list or bibliography provided in a source can

masters	non
83%	85%

- (a) provide a researcher with additional sources of information
- (b) make a paper seem longer than it really is
- (c) lead to more current references on a subject
- (d) provide the author's educational credentials

How well does this item conceptually match the intended objective?

Not at all	Minimally	Moderately	Substantially	Exceptionally
------------	-----------	------------	---------------	---------------

Do you think this item matches another objective equally well or better? _____ If so, which objective? _____

And, what degree does this item conceptually match to this other objective you mentioned. (Leave blank if you did not name an other objective.)

Not at all	Minimally	Moderately	Substantially	Exceptionally
------------	-----------	------------	---------------	---------------

Please write down some talking points as to why this item might not separate masters of objective 1 from non-masters.

Distractor Analysis, srsly, be nice to assessment ppl...

OPTIONS	A	B	C	D*	E	OMIT	TOTAL
FREQ	1	2	1	10	0	0	14
%	7.1%	14.3%	7.1%	71.4%	0.0%	0.0%	100.0%
10- 10	0	0	0	100	0	0	2
9- 9	33	0	0	67	0	0	3
8- 8	0	0	0	100	0	0	1
7- 7	0	0	33	67	0	0	3
0- 6	0	40	0	60	0	0	5
MEAN	9.0	6.0	7.0	7.7	.	.	7.5
Rpbis	0.25	-0.37	-0.08	0.19	.	.	0.19

Correlation between item score & total for person's who picked D, want this to be high for right answer, low for incorrect answers

Average total score for persons who chose this option

% of people in total score category on left

Revisit your questions ...

Old Question

Item #157 Objective 6 Answer Key 3

Plagiarism is:

- a: citing a source using correct citation formats
- b: citing someone else's ideas
- c: presenting someone's ideas as your own
- d: defaming someone's character
- e: telling a lie about someone

Revision

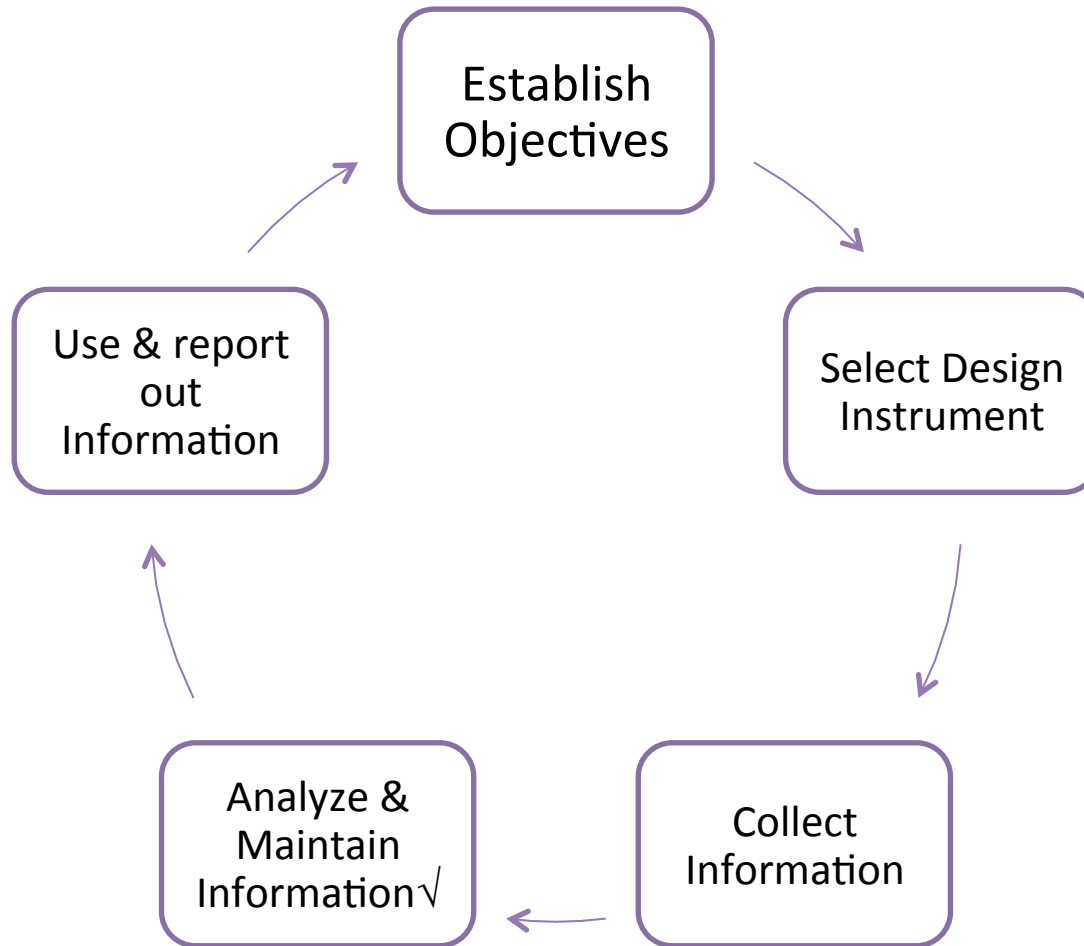
ITEM ID# 12603 objective: 6 answer 4

Oksana is working on a big research paper for her GHUM class. She consults Wikipedia to get some background on her subject and finds some useful quotes. She copies and pastes them into her paper, but forgets to cite them in her bibliography. Oksana is:

- a: Guilty of plagiarism
- b: In violation of the JMU Honor Code
- c: Simply careless
- d: Both A & B

Disposition	Objective	Rationale	Tutorial?	Bloom's Scale
Toss/too easy	6	information ethics	yes	Information/define

Assessment Paradigm



Report

Objective	items	% correct
Determine when information is needed and find it efficiently using a variety of reference sources.	21	70%
Evaluate the quality of the information.	22	82%
Use the information effectively for an appropriate purpose.	20	81%
Employ appropriate technologies to create an information-based product.	25	67%
Use information ethically and legally.	6	80%

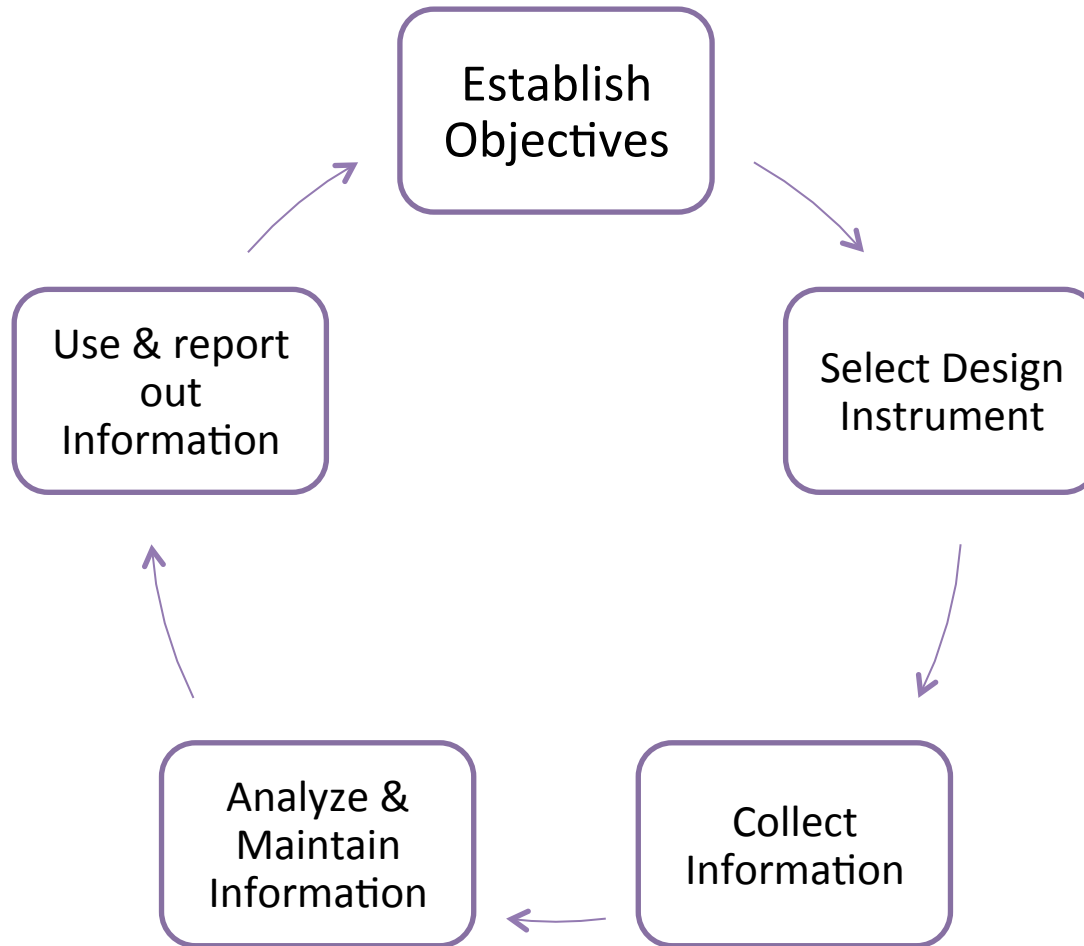
General Education Report to SCHEV, August 2012

Revised, Objective 6 Outcomes

What do we need students to know or do?

The learner identifies citations in a journal article	in order to	distinguish between attributed ideas and original ideas.
The learner summarizes the basic elements required for attributing	in order to	Give credit for ideas and creations where it is due.
The learner identifies potential copyright violations from scenarios	in order to	comply with copyright law.
The learner explains the purpose of logging in with a password to some sites	in order to	Understand privacy concerns in the modern information universe.
The learner gives attribution to the creators of images	in order to	Use images according to fair use guidelines. (7.2.b)

Assessment Paradigm



Writing/Borrowing Objectives

- What proficiencies are of interest on your campus/in your department?
- What standards for disciplines already exist
- Is there an accrediting body that is asking for specific types of assessment?

Modifying

From.....

- “The information literate student access needed information effectively and efficiently” ACRL Standard 2
 - The information literate student retrieves information online or in person using a variety of methods ACRL Standard 2/Performance Indicator 3

To....

- Find a specific article in print or electronically (ARLIS)
- Students choose and develop topics relevant to the course

Your Objectives

- Get a better idea of how to assess students' use of our libraries resources
- Improve on existing tools
- Learning to write objectives
- No wish to reinvent the wheel
- Guidelines and procedures I can implement locally.
- Get some objectives or learning outcomes. Learning to write objectives

Practice

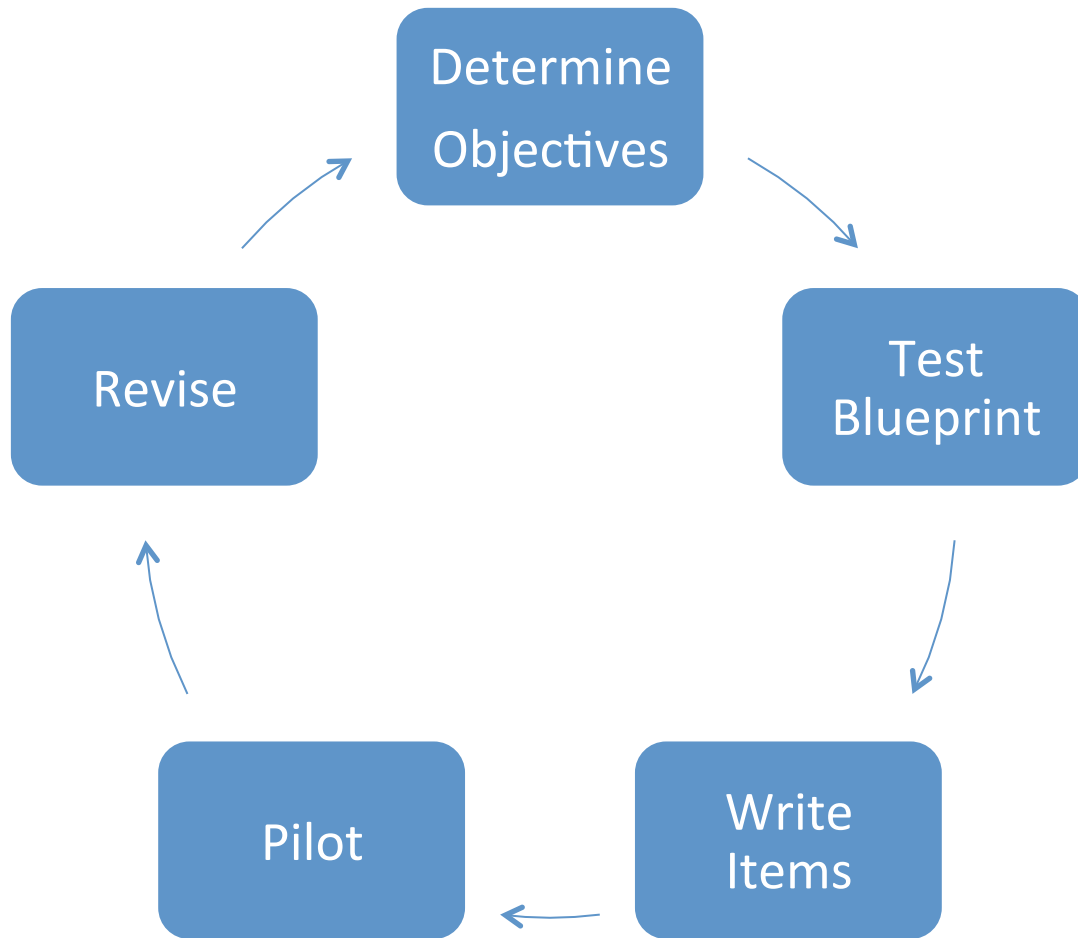
Pick one objective from the ARLIS Basic Skills section that you want to create questions around and write the objective on one of the large index cards



Writing Multiple Choice Items

This presentation is based on one given by Kelli Samonte, JMU CARS, Summer 2012. The mistakes herein are Kathy's not Kelli's.

Creating Assessment Instruments



Learning Objectives

- *Lead* the assessment process
 - Clear goals/objectives make it easier to **create instruments**, analyze data, and report results
- Serve as guides for students in learning
- Communicate the intentions of the course to faculty, future students, administrators, parents

Example Objectives

- After completing this workshop, participants will be able to:
 - Identify the four steps in creating multiple choice exams
 - Identify the different parts of a multiple choice item
 - Distinguish between good and bad multiple choice items
 - Create effective multiple choice items

Test Blueprint

- A **test blueprint** is a table of specifications that weights each objective according to how important it is or how much time is spent covering that objective

Developing a Test Blueprint

- List objectives in a table
- Choose number of total test items (test length)
- Designate number of items per objective
 - Consider proportion of total test
 - Base on importance of objectives
 - Should relate to amount of class time spent teaching the objective
 - Often assign one point per item

Test Blueprint

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Multiple-Choice Item Terminology

- Multiple choice items have a **stem**, **options**, **correct answer**, and **distractors**
- For the bread, cereal, rice and pasta group, the food pyramid recommends (**stem**)

**O
p
t
i
o
n
s**

- a. 2-3 daily servings (**distractor**)
- b. 3-5 daily servings (**distractor**)
- c. 4-6 daily servings (**distractor**)
- d. **6-11 daily servings (correct answer)**

Basic Style and Format Tips

- Avoid excess words – be succinct!
- Use specific, appropriate vocabulary
- Avoid bias (age, ethnicity, gender, disabilities)
- Write stems and options in third person
- Underline and **bold** negative or other important words
- **Have others review your items!**
- **Proofread, proofread, proofread!**

Tips for Writing the Stem

- Keep the stem as short as possible
- Place the main idea of the question in the stem, not the item options
- Don't provide clues to correct answer in stem (e.g., grammatical clues)
- Don't use negative stems too frequently
- Avoid “double-barreled” items

Tips for Writing Response Options

- Develop as many effective options as possible, but three are sufficient (Rodriguez, 2005)
- Vary the location of the correct answer when feasible, or put options in logical order (e.g. chronological, numerical)
- Keep options independent
- Keep options similar - format & length

More Tips for Writing the Options

- Use “all of the above” and “none of the above” sparingly!
- Don’t use “always” or “never”
- Don’t give clues to the right answer
- Make distractors plausible

**multiple choice question:
which of the below makes you confused?**

- [1] all of the above**
- [3] those below the below**
- [2] those above the below**
- [5] those above the above**
- [4] all of the none.**



Ralph Lazar & Lisa Swerling

6077

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Practice

What is wrong with this stem?

True or False:

Pablo Picasso is considered a founder of the impression and cubist movements?

Revised

- Break this item into two parts

True or False: Picasso was a founder of modern impressionism.

True or False: Picasso was a founder of the cubist movement.

How can this item be revised?

During what age period is thumb-sucking likely to produce the greatest psychological trauma?

- A. Infancy
- B. Preschool period
- C. Before Adolescence
- D. During Adolescence
- E. After Adolescence

New and Improved Version

During what age period is thumb-sucking likely to produce the greatest psychological trauma?

- A. Birth to 2 years old
- B. 2 years to 5 years old
- C. 5 years to 12 years old
- D. 12 years to 20 years old
- E. 20 years of age or older

Another One. . .

Albert Einstein was a:

- A. Anthropologist
- B. Astronomer
- C. Chemist
- D. Mathematician

Better Version. . .

Who was Albert Einstein?

- A. An anthropologist
- B. An astronomer
- C. A chemist
- D. A mathematician

And another. . .

World War II was:

- A. The result of the failure of the League of Nations
- B. Horrible
- C. Fought in Europe, Asia and Africa
- D. Fought during the period of 1939-1945

The Improved Version

In which of these time periods was World War II fought?

- A. 1914-1917
- B. 1929-1934
- C. 1939-1945
- D. 1951-1955
- E. 1961-1969

Your Turn

- Choose an objective
- Select content from this objective for which you would like to generate an item
- Create item stem
- Create response option with correct answer
- Create distractors

References

- Haladyna, T. M. (1999). *Developing and validating multiple-choice test items*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Rodriguez, M. C. (2005). Three options are optimal for multiple-choice items: A meta-analysis of 80 years of research. *Educational Measurement: Issues and Practice*, 24, 3-13.
- Downing & Haladyna (2006). *Handbook of test development*. Mahwah, NJ: Lawrence Erlbaum Associates.



Test Options - Platforms

Rebecca Feind

Kathy Clarke

Context and Tools



Test Platforms

Options related to *how* you deliver your test impacts:

- Item-writing
- Types of items
- Item behavior
- Results delivery
- Results interpretation



Paper/Pencil. BendWeekly.com, April 18, 2013.

At what point in the research process would an encyclopedia be the most helpful?

A: Near the end to complete a bibliography

B: Near the beginning to become familiar

C: Near the end to answer specific questions

D: In the middle to find sources for quotation

*Use information effectively for a purpose, C1, IL
Objective 4*

Visual Prompts: *Meg is writing a paper for her American Studies class about Irish Immigration. While searching in the library she finds this video*

Result page: [Prev](#) [Next](#)

Title Out of Ireland [videorecording] / an American Focus production
Publisher [Charlottesville, Va.] : American Focus, Inc. ; Alexandria, VA : PBS Video, 1995

Location	Call number	Status
Media Resources	Videotape no.4763	AVAILABLE

Bookmark URL for this catalog record:
<http://leo.jmu.edu:80/record=b1558270~S0>

Description 1 videocassette (111 min.) : sd., col. with b&w sequences ; 1/2 in
Note Title on cassette container: Out of Ireland: the story of **Irish** emigration to America
Credits Producers, Ellen Casey Wagner, Paul Wagner ; director, Paul Wagner ; writers, Paul Wagner, Kerby Miller ; director of photography, Erich Roland
Note Narrator: Kelly McGillis
Summary Examines the history of the seven million **Irish** who emigrated to America in the 18th, 19th and 20th centuries including the causes of the exodus and the immigrant experience in the United States. Uses photographs, archival footage, manuscript material and interviews with **Irish** immigrants to describe their experiences and the profound influence they have had on American culture
Note VHS format
Subject Ireland -- Emigration and **immigration** -- History
Irish -- United States -- History
United States -- Emigration and **immigration** -- History
Immigrants -- United States
Immigrants -- United States -- Interviews
Ireland -- History
Ireland -- Social conditions
Irish Americans -- History
Catholics -- United States -- History

She watches the video and wants to use it as a source in her paper. She should:

- A: Use the source and cite it properly**
- B: Do not use the source since it is a video
- C: See if she can find a journal article that covers the same material
- D: Use the source but don't include it on her bibliography

Recognize that information is available in a variety of forms including, but not limited to, text, images, and visual media, C1, IL, Objective 1

Distractors can be creative too.....

Jamie is required to use Scientific American to locate sources for his presentation on California Earthquakes. Which of the following searches would be the most effective to meet his needs?

A

	Earthquakes	In: Keywords
OR	California	In: Title
AND	Scientific American	In: Journal Title

B

	Earthquakes	In: Keywords
AND	California	In: Keywords
OR	Scientific American	In: Keywords

C

	Earthquakes	In: Keywords
AND	California	In: Title
OR	Scientific American	In: Journal Title

D

	Earthquakes	In: Keywords
AND	California	In: Keywords
AND	Scientific American	In: Journal Title

Determine when information is needed and find it efficiently using a variety of reference sources, C1 IL, Objective 2

More visual distractors...

*Your GHTH professor has given your group the presentation topic of necrotizing fasciitis. From the library's home page where is **the best** place to begin researching your topic?*

The screenshot shows the James Madison University Libraries homepage. The page is divided into several sections: Services, Research, News, and Help. The Research section is the primary focus, featuring a Quick Search bar, a list of resource categories (Books, Articles, Audio & Video, Background Information, Research Databases), and Subject Guides. The Help section includes an 'Ask A Librarian' button. Annotations A, B, C, and D are placed on the page to highlight specific elements: A points to the 'Background Information' button, B points to the 'LEO Library Catalog' link in the search bar, C points to the 'Articles' button, and D points to the 'Ask A Librarian' button.

A: Background information button
B: JMU Library Catalog link
C: Articles button
D: Ask-A-Librarian button

- A: Background information button
- B: JMU Library Catalog link
- C: Articles button
- D: Ask-A-Librarian button

Determine when information is needed and find it efficiently using a variety of reference sources, C1 IL, Objective 2

Blackboard

Match the scholarly information format with the most accurate research need.

- A. Reference Sources
- C. Books or Monographs
- B. Scholarly Journals

- A. You are researching the Civil War and need background information that covers multiple sides of an issue.
- B. You need information about bullying prevention in high schools. Your professor has asked that your information was published in the last two years.
- C. You have narrowed down your Vegetarian research topic to focus on the vegetarian role in Hinduism. You need focused coverage that is written by experts.

Determine when information is needed and find it efficiently using a variety of reference sources, C1 IL, Objective 2

Qualtrics

Please use the paragraph below to answer Items 49-51.

Sex education in middle and high schools often rely on textbooks chosen by biology teachers and approved by a school or parent board. Because these texts are subject to such intense scrutiny, the selections of the reviewers tend to be of questionable value: the texts contain vague and incomplete information that is ultimately of little real-life use to the students they are meant to inform. Adolescents receive most of their sex education from popular magazines that cater to the real needs of this group. Articles from these magazines are easily available on drugstore racks; therefore it is suggested that collections of these articles would serve much better as learning texts in the Sex Education Classroom. Magazine articles can engage young readers, address topics of interest and import to them, and can be photocopied and made available at a much lower price than a hardback textbook.

49. What is the main idea in this paragraph?

- Sex education has no place in the classroom.
- Students are not able to understand sex education textbooks chosen by their teachers.
- Sex education teachers should consider incorporating non-traditional materials into the classroom.
- Students learn everything there is to know about sex education from popular magazines.

50. Which of these statements would MOST warrant further investigation or supporting evidence?

- Magazines are easily available on drugstore racks.
- Adolescents receive most of their sex education from popular magazines.
- Sex education in middle and high schools often rely on textbooks chosen by biology teachers and approved by a school or parent board.
- Magazine articles can engage young readers.

*Use information effectively for a purpose C1 IL Objective 4 and
Determine when information is needed and find it efficiently*

using a variety of reference sources C1 IL Objective 2

Ranking items

Rank the items below from most specific (1) to most general (4)

Peer Reviewed Journal Article	1
Scholarly Book	2
Subject-specific Encyclopedia Entry	3
General Encyclopedia Entry	4

Sorting items




Organize the sources listed below into the boxes.

Items	Scholarly Sources	Popular Sources
Popular Magazines	Peer Reviewed Journals 1	Commercial Websites 1
Documentary Videos		
Government Websites		
Newspaper articles		

Recognize that information is available in a variety of formats C1 IL Objective 1

Results - Qualtrics

3. OO2. You are beginning research on the topic "government funding for health care" for a 5 minute informative speech. Which of the following research questions fits both the topic and the assignment parameters?

#	Answer	Bar	Response	%
1	Health insurance companies should be better regulated?		0	0%
2	The government should pay for health care for all Americans?		6	27%
3	How could public health insurance improve American's health?		15	68%
4	Can government agencies make strides in cancer treatments?		1	5%
	Total		22	

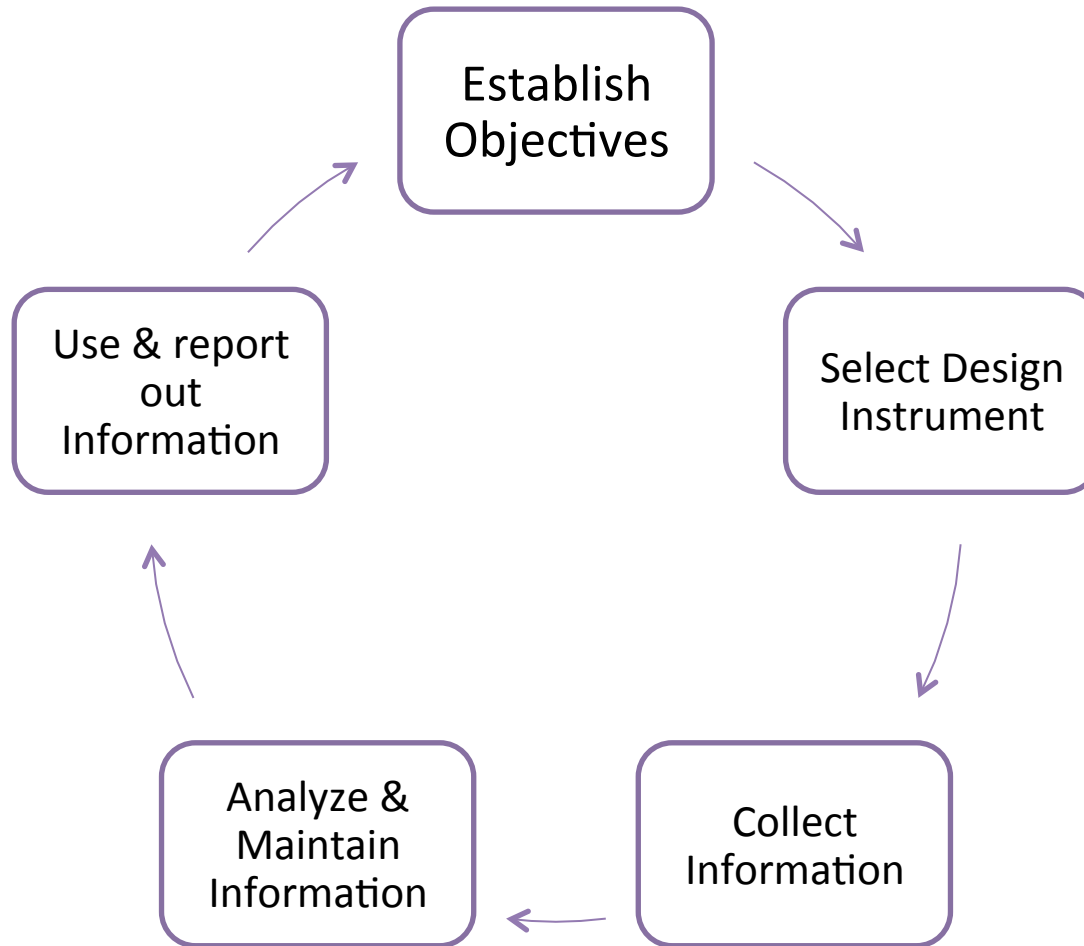
Statistic	Value
Min Value	2
Max Value	4
Mean	2.77
Variance	0.28
Standard Deviation	0.53
Total Responses	22

Determine when information is needed and find it efficiently using a variety of reference sources.

Workshop Learning Objectives

- Participants will identify aspects of Information Competencies for Students in Design Disciplines that are suitable for assessment by multiple choice questions
- Participants will create effective multiple choice items around Design discipline information literacy competencies

So what happens now?



Collect Information

- Email link
- [http://jmu.qualtrics.com/SE/?
SID=SV_bJYBffJQviJsUEI](http://jmu.qualtrics.com/SE/?SID=SV_bJYBffJQviJsUEI)